REMARKS

Claims 1-22 are pending in the present application. Reconsideration of the application in view of the arguments set forth herein is respectfully requested.

In the Office Action, claims 1-22 were rejected under 35 U.S.C. § 102 as allegedly being anticipated by Kline (U.S. Patent Publication No. 2003/0129775 A1). Applicants respectfully traverse the Examiner's rejection.

As the Examiner well knows, an anticipating reference by definition must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). To the extent the Examiner relies on principles of inherency in making the anticipation rejections in the Office Action, inherency requires that the asserted proposition necessarily flow from the disclosure. *In re Oelrich*, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981); *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990); *Ex parte Skinner*, 2 U.S.P.Q.2d 1788, 1789 (Bd. Pat. App. & Int. 1987); *In re King*, 231 U.S.P.Q. 136, 138 (Fed. Cir. 1986). It is not enough that a reference could have, should have, or would have been used as the claimed invention. "The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Oelrich*, at 326, quoting *Hansgirg v. Kemmer*, 40 U.S.P.Q. 665, 667 (C.C.P.A. 1939); *In re Rijckaert*, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993), quoting *Oelrich*, at 326; see also *Skinner*, at 1789. "Inherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Skinner*, at 1789, citing *Oelrich*. Where anticipation is found through inherency, the Office's burden of establishing prima facie anticipation includes the burden of providing "...some evidence or scientific reasoning to

establish the reasonableness of the examiner's belief that the functional limitation is an inherent characteristic of the prior art." *Skinner* at 1789.

Moreover, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. § 2142. Moreover, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); M.P.E.P. § 2143.03.

With respect to alleged obviousness, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1986). In fact, the absence of a suggestion to combine is dispositive in an obviousness determination. *Gambro Lundia AB v. Baxter Health-care Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). The mere fact that the prior art can be combined or modified does not make the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990); M.P.E.P. § 2143.01. The consistent criterion for determining obviousness is whether the prior art would have suggested to one of ordinary skill in the art that the process should be carried out

and would have a reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991; *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988); M.P.E.P. § 2142.

By way of background, Applicants' invention is generally directed to various methods of controlling properties and characteristics of a gate insulation layer based upon electrical test data. To that end, independent claim 1 sets forth the steps of performing at least one electrical test on at least one semiconductor device, determining at least one parameter of at least one process operation to be performed to form at least one gate insulation layer on a subsequently formed semiconductor device **based upon** electrical data obtained from the at lest one electrical test, and performing the at least one process operation comprised of the determined at least one parameter to form the at least one gate insulation layer on the subsequently formed semiconductor device. Independent claim 9 is directed to the performance of the method on a memory device, whereas independent claim 16 is directed to the performance of the method on a transistor. Independent claims 21 and 22 are likewise directed to performing the various methods described herein on a memory device wherein specific electrical test parameters are used as recited in claims 21 and 22.

With this understanding of Applicants' invention, it is respectfully submitted that Kline is very far afield from the present invention. Initially, all of the pending claims relate to the formation of an insulating layer (sometimes a particular type of insulating layer depending upon the particular claim) based upon various electrical test data regarding a semiconductor device (or transistor or memory device depending upon the particular claim). As understood by the undersigned, Kline is not even remotely concerned how insulation layers are formed on an

integrated circuit device. More specifically, as described in the background section of the Kline reference, the invention disclosed in Kline is directed to solve one or more problems as it relates to the matching of matched sets of chips employed in modern electronic devices. Kline notes that one approach for improving overall system performance is through use of matched sets of chips. For example, Kline states that several identical or dissimilar components that have been identified by the individual testing phase of component processing to have certain performance characteristics may be assembled together as a matched set. Kline, ¶ 0005. Kline goes on to note that one type of matched set includes a collection of identical components which have been identified to meet specific system performance requirements. Kline, ¶ 0006. In Kline, components that are found to exhibit similar behavior under various input stimuli will constitute a matched set of identical devices. Kline also notes that another type of matched set includes components of different devices that are combined such that the aggregate, cascaded performance meets system specifications. Kline, ¶ 0007. Kline specifically identifies one example wherein a digital-to-analog converter is paired with an operational amplifier.

According to Kline, one of the problems solved by his invention is that certain mismatches are not identified when the components are tested individually, *i.e.*, certain mismatches are not identified until the entire chip collection is assembled and the components are tested together for the first time. Kline, ¶ 0008. In such a situation, if under performance or failure is detected, the chip collection must be disassembled and, in some cases, some chips are simply discarded. Kline notes that a need has arisen for a method that allows testing of the individual components together prior to assembly of the matched set. Kline, ¶ 0009.

In rejecting the pending claims, the Examiner relied on ¶¶ 0010-0014 of Kline. However, a review of those paragraphs, respectfully, does not disclose any aspects as it relates to

determining a parameter of a process operation to form, for example, a gate insulation layer, based upon electrical test data, and then forming an insulating layer on at least one subsequently processed substrate using the process operation comprised of the determined parameter. As understood by the undersigned, the cited paragraphs of Kline provide a general high level summary of the invention described in Kline. For example, in ¶ 0010, Kline notes that the invention disclosed therein allows for testing of various integrated circuit chips prior to assembly of the matched set, wherein the testing involves use of a wafer level interposer that accommodates multiple wafers that contain all of the chips that may be included in the matched set. Kline also notes that, prior to testing, the two wafers are electrically and mechanically coupled to the interposer such that the wafer interposer assembly may be connected to a testing apparatus to determine which integrated circuit chips from the first wafer could be included in a matched set with particular integrated chips from the second wafer. Kline goes on to note that once testing is complete the wafer interposer assembly may be diced into a plurality of chip assemblies having chips of the first wafer and a plurality of chip assemblies having chips of the second wafer. Kline, ¶ 0013. Lastly, Kline notes that, by performing the testing prior to assembly of the matched set, the performance characteristics of each of the matched sets assembled using integrated circuit chips of the first and second wafers are enhanced as is the overall performance of the entire lot of matched set devices. Kline, ¶ 0014.

Perhaps the disclosure of Kline may be best understood by reference to Figure 6 wherein a wafer interposer assembly of Figure 1 is connected to a testing unit 220. Kline, ¶¶ 0061-0063. According to Kline, after electrical connection to the testing unit 220, the wafer interposer assembly 10 can be used to run chips 36 and 38 (see Figure 1) on wafers 22 and 24 through any number of tests including a complete parametric test or other types of tests that are deemed

necessary for that particular chip design. Kline goes on to note that the invention disclosed therein may be used to select chips 34 and 38 from each of the wafers 22 and 24 that will be used in a matched set of chips.

In view of the foregoing, it is respectfully submitted that the Kline reference has virtually no applicability to the claimed invention. As understood by the undersigned, Kline does not disclose or even remotely suggest the methodology whereby at least one parameter of a process operation to be performed to form an insulation layer on a subsequently formed device is based upon electrical test data obtained from a previous electrical test. It is respectfully submitted that the reference to Kline is fundamentally far away from the inventions set forth in the pending claims.

It is respectfully submitted that it is beyond legitimate dispute that Kline does not disclose each and every limitation of each of the claims set forth in the pending application, thus, it is believed that the Examiner's anticipation rejection of all pending claims should be withdrawn. Moreover, there is simply no suggestion in the art of record to modify the Kline reference so as to arrive at the inventions defined by the pending claims. As set forth above, Kline is simply silent as it relates to determining process parameters to form insulation layers based upon electrical test data. Of course, the Examiner will need to consult the language of each of the independent claims as each of the independent claims are defined by the entirety of the steps set forth therein. However, it is respectfully submitted that one skilled in the art, when viewing Kline, would not be motivated to modify the teachings of Kline so as to arrive at Applicants' claimed invention. A recent Federal Circuit case makes it crystal clear that, in an obviousness situation, the prior art must disclose each and every element of the claimed invention, and that any motivation to combine or modify the prior art must be based upon a

suggestion in the prior art. *In re Lee*, 61 U.S.P.Q.2d 143 (Fed. Cir. 2002). Conclusory statements regarding common knowledge and common sense are insufficient to support a finding of obviousness. *Id.* at 1434-35.

In view of the foregoing, it is respectfully submitted that all pending claims are in condition for immediate allowance. The Examiner is invited to contact the undersigned attorney at (713) 934-4055 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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